Because Yamamoto et al. teaches that a correction calculation must be performed at least one time (and up to four times) for each of areas A1 to A4, Yamamoto et al. fails to teach "a repeating element" as recited by Claim 1. Note that if Yamamoto et al. taught a repeating element, then correction calculations would not have to be performed one or more times for each area.

For these reasons, Claim 1 is not anticipated by Yamamoto et al. Claim 2, which depends from Claim 1, is not anticipated by Yamamoto et al. for at least the same reasons as Claim 1.

Claim 3 recites "identifying actual repeating elements in the layer". Again, the Examiner indicates that col. 7, lines 61-67 of Yamamoto et al. teaches the step of identifying actual repeating elements in the layer. However, as described above in connection with Claim 1, Yamamoto et al. fails to teach "repeating elements" as recited in Claim 3.

Claim 3 further recites "dividing the layer to form database repeating elements by making dividing lines within the actual repeating elements to exclude edge portions of the actual repeating elements". The Examiner indicates that this element of Claim 3 is taught by Yamamoto et al. at col. 3, lines 51-59. However, this section of Yamamoto et al. does not teach "repeating elements", but rather teaches three different segments S1, S2 and S3 (Fig. 4) having three different distances A, B and C, respectively, from an adjacent pattern. Thus, this section of Yamamoto et al. teaches away from "repeating elements".

Claim 3 further recites "an instruction for inserting the at least one database repeating element into locations of the database repeating elements". The Examiner indicates that this element of Claim 3 is taught by Yamamoto et al. at col. 2, lines 19-31. However, this section of Yamamoto et al. describes "a conventional simulation-based approach" wherein "a rectangle of a width of Δt is added/removed along the contour of a mask

pattern" such that "the light intensity at a point of interest
on the contour reaches a desired value". However,
adding/removing a width along the contour of a mask pattern is
not the same as "an instruction for inserting the at least one
database repeating element into locations of the database
repeating elements" as recited by Claim 3.

For these reasons, Claim 3 is not anticipated by Yamamoto
et al.

Claim 5 recites "at least one database repeating element".

The Examiner indicates that col. 7, lines 61-67 of Yamamoto
et al. teaches "at least one database repeating element" as
recited by Claim 5. However, as described above in connection
with Claim 1, this section of Yamamoto et al. fails to teach a
"repeating element".

Claim 5 further recites "an instruction giving locations at
which the at least one database repeating element is to be
placed".

The Examiner indicates that Yamamoto et al. teaches this
element of Claim 5 at col. 6, lines 23-29. However, this
section of Yamamoto et al. states:

> [C]orrection is carried out while shifting an OPE window <u>of
> fixed size</u>. In the case of Fig. 9, therefore, <u>correction
> will be repeated four times</u> for the pattern a <u>and two times</u>
> for the sides b-1 and b-2 of the pictorial character b."
> (Emphasis added.)

Thus, while an OPE window has a fixed size, Yamamoto et al.
does not teach that the contents of different OPE windows are
repeating elements. In fact, Yamamoto et al. explicitly teaches
that the correction operation must "be repeated four times for
the pattern a", wherein the pattern a includes four proximity
effect correction windows, the centers of which are identified
by the symbol O. (Yamamoto et al., Col. 5, lines 64-65; Fig.
9.) Because Yamamoto et al. explicitly teaches that a separate
correction operation must be performed for each of the windows,
Yamamoto et al. teaches away from "an instruction giving

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locations at which the at least one database repeating element
is to be placed".

For these reasons, Claim 5 is not anticipated by Yamamoto
et al. Claims 6 and 9, which depend from Claim 5, are not
anticipated by Yamamoto et al. for at least the same reasons as
Claim 5.

Claims 10 and 11 have been rejected under 35 U.S.C. 103(a)
as being unpatentable over Yamamoto et al. in view of Tomita
(Pub. No. 2002/0026260).

Claim 10 recites "at the design house, dividing the mask
layout to identify a plurality of mask elements that are
repeating and a skeleton of remaining elements, for the
repeating mask elements creating a single database describing a
repeating element and a set of instructions as to where to
locate the repeating element".

As described above, Yamamoto et al. fails to teach
"identifying a plurality of mask elements that are repeating"
and "creating a single database describing a repeating element
and a set of instructions as to where to locate the repeating
element". Tomita fails to remedy these deficiencies of Yamamoto
et al. (and the Examiner does not claim that Tomita remedies
these deficiencies).

For these reasons, Claim 10 is allowable over Yamamoto et
al. in view of Tomita. Claim 11, which depends from Claim 10,
is allowable over Yamamoto et al. in view of Tomita for at least
the same reasons as Claim 10.

Claims 4, 7 and 8 have been objected to as being dependent
upon a rejected base claim. The Examiner has indicated that
these claims would be allowable if rewritten in independent form
including all of the limitations of the base claim and any
intervening claims. However, because the Applicants believe
that base Claims 3 and 5 are allowable for reasons stated above,